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“Dewey Defeats Truman”: Be Aware of Data Revisions

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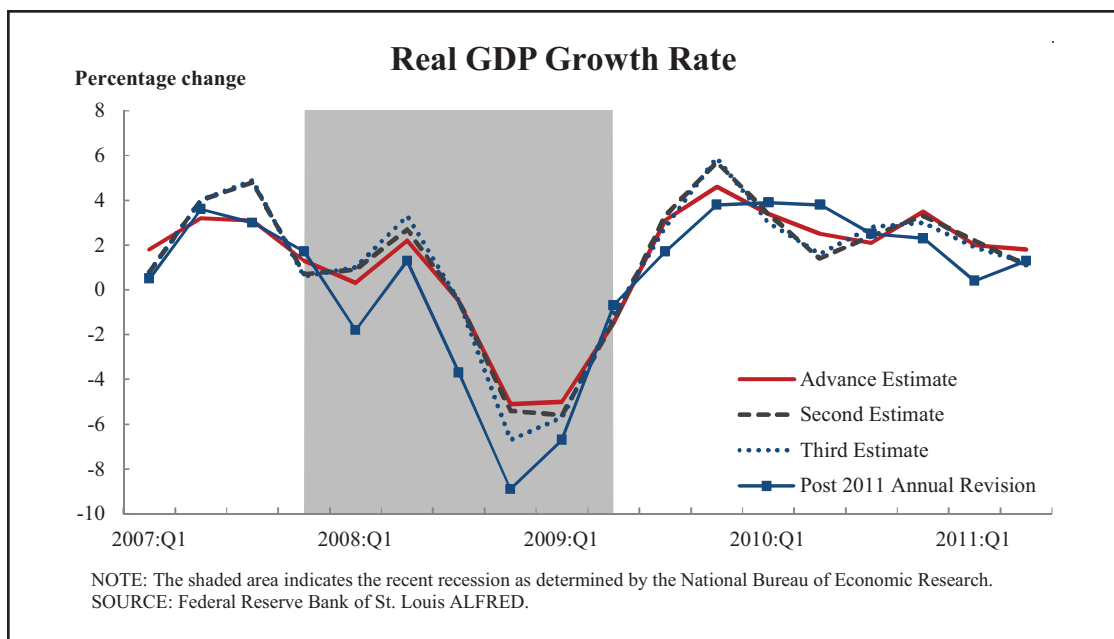
“One of the challenges we face as policymakers is the availability of data to assess the state of the economy in real time. Many economic data series...are subject to subsequent revisions that can be quite sizable and can alter our perceptions of the economic situation.”

—James Bullard, President and CEO, Federal Reserve Bank of St. Louis, 2011

President Harry Truman’s victory in the 1948 election was first announced by the *Chicago Tribune* as a loss to New York Governor Thomas Dewey. When even a simple counting of votes can produce such a large error, imagine the tremendous challenges and pressure for timeliness and accuracy facing government and private agencies in computing economic indicators for a \$14 trillion economy.¹ Collecting the necessary economic information and processing it requires time and patience. Many people, including investors and policymakers, want information about current economic conditions as soon as possible so they can make decisions. However, there is often a trade-off between the timeliness and the accuracy of economic data.² For this reason, many data agencies report an initial release based on the available data and staff estimates for the information that is unavailable. The media frequently use the initial data releases for headline news.

Data revision is somewhat like revising a college writing assignment. Students usually turn in the initial draft of the assignment. After they conduct more research and receive feedback from their professor, they revise the draft a few times before submitting the final draft. Similarly, after agencies that provide data receive additional information and update their initial calculations, the first releases are revised one or more times. The number and frequency of revisions vary for different data series.³ For example, data for gross domestic product (GDP) generally undergo two monthly revisions after the initial release. The Bureau of Economic Analysis ([BEA](#)) computes GDP by collecting data from thousands of government and private sources on factors such as business fixed investment, trade, individual consumption, and government spending. Four weeks after a quarter ends, the BEA announces its first release of GDP, known as the *advance* estimate. Because only 45 to 75 percent of the data are available at this time, the BEA makes its best estimate for the missing components in order to provide a timely release.⁴ At the end of the following month, the BEA publishes the *second* GDP estimate, which includes revisions to the advance estimate. Finally, revisions based on more complete information are reflected in the *third* GDP estimate provided in the subsequent month.

Estimates made by the BEA in its initial GDP release are often very close to the numbers in the third estimate. The impact of the revisions in the second and third estimates is usually not large at dollar levels; generally there is more interest in the impact on growth rates. The chart shows how each later estimate differs from the advance estimate. On average, the second and third revisions in GDP growth rates have changed 0.50 percent and 0.54 percent, respectively, from the advance estimate over the past 11 years.



Monthly data revisions are not the only type of revision to GDP data. Every July, the BEA performs a revision that involves more changes and generally has a greater impact on the data than monthly revisions. This revision comes in two forms: The *annual revision* is in response to new seasonal factors and incorporates new source data from the Census Bureau. The *benchmark* (comprehensive) revision, which occurs about every five years, includes changes in methodology and definitions.⁵ For instance, in 1999 the BEA included computer software purchases as a part of business fixed investment in calculating GDP; these purchases were generally considered an intermediate input before the revision.⁶ Annual and benchmark revisions can affect data going back many years. As the chart shows, the impact of the annual revision in July 2011 on real GDP growth rates is quite significant compared with the monthly revisions.

Similar monthly, annual, and benchmark revisions occur for many other economic series. Awareness of these revisions is very important for economists, policymakers, and investors.⁷ Revisions can change people’s original views on the economy. For example, the 2011 annual revision of GDP in the chart indicates that the 2007-08 recession was much deeper than originally perceived based on the initial data. Revised data can also change economic forecasts significantly, which can alter expectations about future economic conditions. Without an understanding of data revisions, policymakers and investors may be misled by the advance release of data when they make decisions. Therefore, they need to base their decisions on (i) the data that are currently available and (ii) the expectation for future data revisions. The St. Louis Fed’s Archival Federal Reserve Economic Data ([ALFRED](#)) database contains [vintage](#) versions of data for more than 30,000 series. Access to such data helps decisionmakers evaluate past policies and investments. ■

NOTES

- ¹ Examples of economic indicators include measures of national output such as GDP, price indexes such as personal consumption expenditure, and labor market measures such as nonfarm payroll employment and the unemployment rate.
- ² One of the exceptions is the reporting of financial data such as interest rates and stock prices, which are considered accurate at the time of reporting.
- ³ Some data such as initial unemployment insurance claims are revised on a weekly basis; in rare cases, some series are never revised.
- ⁴ For detailed information on how data for computing GDP are collected, see Grimm and Weadock (2008).
- ⁵ For a detailed explanation of seasonal adjustment, see Gascon (2009).
- ⁶ See Kliesen (1999). Intermediate inputs are not directly counted in GDP since they are not final products. Investment, however, is a component of GDP calculation.
- ⁷ See Bullard (2011).

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